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## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION  
(PCT Rule 61.2)

Date of mailing (day/month/year) 17 November 2000 (17.11.00)	To:  Commissioner US Department of Commerce United States Patent and Trademark Office, PCT 2011 South Clark Place Room CP2/5C24 Arlington, VA 22202 ETATS-UNIS D'AMERIQUE in its capacity as elected Office
International application No. PCT/US00/07679	Applicant's or agent's file reference F-9060-PCT
International filing date (day/month/year) 23 March 2000 (23.03.00)	Priority date (day/month/year) 26 March 1999 (26.03.99)
Applicant COON, Thomas, D. et al	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

05 October 2000 (05.10.00)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Henrik Nyberg  Telephone No.: (41-22) 338.83.38
---	---

REPLACED BY  
ART 34 AMDT

1           22. A bottom assembly according to any of Claims 1-21,  
2 and which is incorporated in a drum.

1           23. A drum assembly, comprising a container drum and a  
2 bottom assembly according to any of the preceding claims.

1           24. An anchoring assembly, comprising an anchoring  
2 member adapted to be mounted to a container drum bottom  
3 heading and an elastic loop member secured to said anchoring  
4 member by a tie passing through said elastic loop member.

1           25. An anchoring assembly according to Claim 24,  
2 wherein said tie is a cable tie having a ratchet-type  
3 closure mechanism.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/07679

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :B65D 85/66  
US CL :206/389, 397, 408, 409, 413, 415, 416,

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 206/389, 397, 408, 409, 413, 415, 416,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,105,943 A ( <i>LESKO et al.</i> ) 21 April 1992, See col. 3 line 33 to col. 4, line 60.	16, 18 and 21
A	US 5,819, 934 A ( <i>COOPER</i> ) 13 October 1998, See abstract.	16

 Further documents are listed in the continuation of Box C. See patent family annex.

Special categories of cited documents:			
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

27 JUNE 2000

Date of mailing of the international search report

19 JUL 2000

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231  
Facsimile No. (703) 305-3230Authorized officer  
PAUL SEWELL  
Telephone No. (703) 308-2126*Sheila Vency*  
Paralegal Specialist  
Technology Center 3700

PATENT COOPERATION TREATY

COPY

From the INTERNATIONAL SEARCHING AUTHORITY

To: MITCHELL W. SHAPIRO  
VORYS, SATER, SEYMOUR  
AND PEASE LLP  
1828 L STREET, N.W.  
ELEVENTH FLOOR  
WASHINTON, D.C. 20036

PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

Date of Mailing  
(day/month/year)

19 JUL 2000

Applicant's or agent's file reference F-9060-PCT	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US00/07679	International filing date (day/month/year) 23 MARCH 2000
Applicant GREIF BROS. CORPORATOIN	

1.  The applicant is hereby notified that the international search report has been established and is transmitted herewith.

**Filing of amendments and statement under Article 19:**  
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2.  The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3.  With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in rules 90 bis 1 and 90 bis 3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer <i>for</i> PAUL SEWELL Telephone No. (703) 308-2126	<i>Sheila Veney</i> Paralegal Specialist Technology Center 3700
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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference F-9060-PCT	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US00/07679	International filing date (day/month/year) 23 MARCH 2000	(Earliest) Priority Date (day/month/year) 26 MARCH 1999
Applicant GREIF BROS. CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
 the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
  - contained in the international application in written form.
  - filed together with the international application in computer readable form.
  - furnished subsequently to this Authority in written form.
  - furnished subsequently to this Authority in computer readable form.
  - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the
  - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of invention is lacking (See Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 3

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

None of the figures.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US00/07679

**Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)**

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

**NEW ABSTRACT**

An improved wire-coil packaging drum comprises a drum (10A) with a bottom heading (60) having a hole (62), and an anchoring member mounted to the bottom heading (60) and cooperating with the hole (62) such that an anchoring portion (76) of the anchoring member (70) is disposed to anchor a hold-down system for a wire coil snap-mounted plug that is conveniently inserted into the hole (62) of the bottom heading (60), with the hold-down system comprising an elastic loop, such as a rubber band (80), which may be secured to the plug by a cable tie (82) or the like.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/07679

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :B65D 85/66  
 US CL :206/389, 397, 408, 409, 413, 415, 416,  
 According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 206/389, 397, 408, 409, 413, 415, 416,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,105,943 A ( <i>LESKO et al.</i> ) 21 April 1992, See col. 3 line 33 to col. 4, line 60.	16, 18 and 21
A	US 5,819, 934 A ( <i>COOPER</i> ) 13 October 1998, See abstract.	16

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

27 JUNE 2000

Date of mailing of the international search report

19 JUL 2000

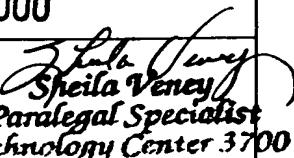
Name and mailing address of the ISA/US  
 Commissioner of Patents and Trademarks  
 Box PCT  
 Washington, D.C. 20231

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Authorized officer

PAUL SEWELL

Telephone No. (703) 308-2126


 Sheila Veney  
 Paralegal Specialist  
 Technology Center 3700

## NOTES TO FORM PCT/ISA/220 (continued)

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### "Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

The statement should be brief, it should not exceed 500 words if in English or if translated into English.

It should not be confounded with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It should not contain any dispensing comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### In what language?

The amendments must be made in the language in which the international application is published. The letter and any statement accompanying the amendments must be in the same language as the international application if that language is English or French; otherwise, it must be in English or French, at the choice of the applicant.

### Consequence if a demand for international preliminary examination has already been filed?

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

### Consequence with regard to translation of the international application for entry into the national phase?

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Office, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty and of the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

**What parts of the international application may be amended ?**

The claims only.

The description and the drawings may only be amended during international preliminary examination under Chapter II.

**When ?** Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

**Where not to file the amendments ?**

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been filed, see below.

**How ?** Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

**What documents must/may accompany the amendments ?**

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confounded with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

## PATENT COOPERATION TREATY

COPY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: MITCHELL W. SHAPIRO  
VORYS, SATER, SEYMOUR  
AND PEASE LLP  
1828 L STREET, N.W.  
ELEVENTH FLOOR  
WASHINGTON, D.C. 20036

VORYS SATER

APR 10 2001

SEYMOUR AND PEASE LLP

PCT

NOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing  
(day/month/year)

09 APR 2001

Applicant's or agent's file reference  
F-9060-PCT

## IMPORTANT NOTIFICATION

International application No. PCT/US00/07679	International filing date (day/month/year) 23 MARCH 2000	Priority Date (day/month/year) 26 MARCH 1999
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Applicant  
GREIF BROS. CORPORATOIN *← misspelled*

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer  
SHIAN LUONG

Telephone No. (703) 308-2039

*Sheila Veney*  
Sheila Veney  
Paralegal Specialist  
Technology Center 3700

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference F-9060-PCT	FOR FURTHER ACTION      See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/07679	International filing date (day/month/year) 23 MARCH 2000	Priority date (day/month/year) 26 MARCH 1999
International Patent Classification (IPC) or national classification and IPC IPC(7): B65D 85/66 and US Cl.: 206/389, 397, 408, 409, 413, 415, 416,		
Applicant GREIF BROS. CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

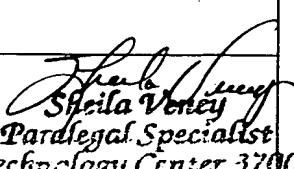
2. This REPORT consists of a total of 4 sheets.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 05 OCTOBER 2000	Date of completion of this report 26 MARCH 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer SHIAN LUONG Telephone No. (703) 308-2039
Facsimile No. (703) 305-3230	 Sheila Veney Paralegal Specialist Technology Center 3700

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/07679

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

 the international application as originally filed the description:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the claims:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the drawings:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the sequence listing part of the description:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is: the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in printed form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4.  The amendments have resulted in the cancellation of: the description, pages \_\_\_\_\_ NONE the claims, Nos. \_\_\_\_\_ NONE the drawings, sheets/fig. \_\_\_\_\_ NONE5.  This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/07679

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. statement

**Novelty (N)** **Claims** 1-15, 17, 19-27 **YES**  
**Claims** 16 and 18 **NO**

Claims 1-15, 17, 19-27 YES

Claims 16 and 18 NO

**Inventive Step (IS)** Claims 1-15, 17, 19-20 and 22-27 **YES**  
**Claims 16, 18 and 21** **NO**

Claims 1-15, 17, 19-20 and 22-27 YES

Claims 16, 18 and 21 NO

Claims 1-27 YES

Claims NONE NO

## 2. citations and explanations (Rule 70.7)

Claims 16 and 18 lack novelty under PCT Article 33(2) as being anticipated by Lesko et al (US 5,105,943). Lesko et al disclose a bottom heading assembly 16 having a hole on reference element 24 and a bottom heading 14. An anchoring member 18 is mounted to the bottom heading and cooperating with the hole. The anchoring member has an opening as shown in Figure 3.

Claim 21 lack an inventive step under PCT Article 33(3) as being obvious over Lesko et al. It would have been obvious to select the desired material for the anchor member such as making them out of plastic material.

Claims 1-15, 17, 19-20 and 22-27 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest an anchoring member having portions disposed at opposite sides of the bottom heading.

----- NEW CITATIONS -----

NONE

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

This report has been drawn on the basis of the description,  
page(s) 1-12, as originally filed.  
page(s) NONE, filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the claims,  
page(s) 13-16, as originally filed.  
page(s) NONE, as amended under Article 19.  
page(s) NONE, filed with the demand.  
and additional amendments:  
Page 17, filed with the letter of 20 February 2001

This report has been drawn on the basis of the drawings,  
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NONE

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and additional amendments:  
NONE

PLS 00/07679

IPCA/US 20 FEB 2001

1        22. A bottom assembly according to any of Claims 1-21,  
2 and which is incorporated in a drum.

1        23. A drum assembly, comprising a container drum and a  
2 bottom assembly according to any of the preceding claims.

1        24. An anchoring assembly, comprising an anchoring  
2 member adapted to be mounted to a container drum bottom  
3 heading and an elastic loop member secured to said anchoring  
4 member by a tie passing through said elastic loop member.

1        25. An anchoring assembly according to Claim 24,  
2 wherein said tie is a cable tie having a ratchet-type  
3 closure mechanism.

1        26. A bottom assembly according to Claim 16, wherein  
2 said bottom heading is unitary.

27. A bottom assembly according to Claim 1, wherein  
said bottom heading is unitary.

—SUBSTITUTE SHEET—

SEARCHED INDEXED

## PATENT COOPERATION TREATY

## PCT

12 APR 2001

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference F-9060-PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/07679	International filing date (day/month/year) 23 MARCH 2000	Priority date (day/month/year) 26 MARCH 1999
International Patent Classification (IPC) or national classification and IPC IPC(7): B65D 85/66 and US Cl.: 206/389, 397, 408, 409, 413, 415, 416,		
Applicant GREIF BROS. CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

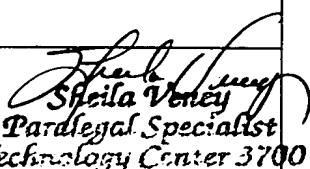
2. This REPORT consists of a total of 4 sheets.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 05 OCTOBER 2000	Date of completion of this report 26 MARCH 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer SHIAN LUONG Telephone No. (703) 308-2039
Facsimile No. (703) 305-3230	 Sheila Veney Paralegal Specialist Technology Center 3700

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/07679

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

 the international application as originally filed the description:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the claims:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the drawings:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the sequence listing part of the description:pages \_\_\_\_\_ (See Attached) \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is: the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in printed form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4.  The amendments have resulted in the cancellation of: the description, pages \_\_\_\_\_ NONE the claims, Nos. \_\_\_\_\_ NONE the drawings, sheets/fig. \_\_\_\_\_ NONE5.  This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/07679

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. statement

Novelty (N)	Claims <u>1-15, 17, 19-27</u>	YES
	Claims <u>16 and 18</u>	NO
Inventive Step (IS)	Claims <u>1-15, 17, 19-20 and 22-27</u>	YES
	Claims <u>16, 18 and 21</u>	NO
Industrial Applicability (IA)	Claims <u>1-27</u>	YES
	Claims <u>NONE</u>	NO

## 2. citations and explanations (Rule 70.7)

Claims 16 and 18 lack novelty under PCT Article 33(2) as being anticipated by Lesko et al (US 5,105,943). Lesko et al disclose a bottom heading assembly 16 having a hole on reference element 24 and a bottom heading 14. An anchoring member 18 is mounted to the bottom heading and cooperating with the hole. The anchoring member has an opening as shown in Figure 3.

Claim 21 lack an inventive step under PCT Article 33(3) as being obvious over Lesko et al. It would have been obvious to select the desired material for the anchor member such as making them out of plastic material.

Claims 1-15, 17, 19-20 and 22-27 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest an anchoring member having portions disposed at opposite sides of the bottom heading.

## ----- NEW CITATIONS -----

NONE

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

This report has been drawn on the basis of the description,  
page(s) 1-12, as originally filed.  
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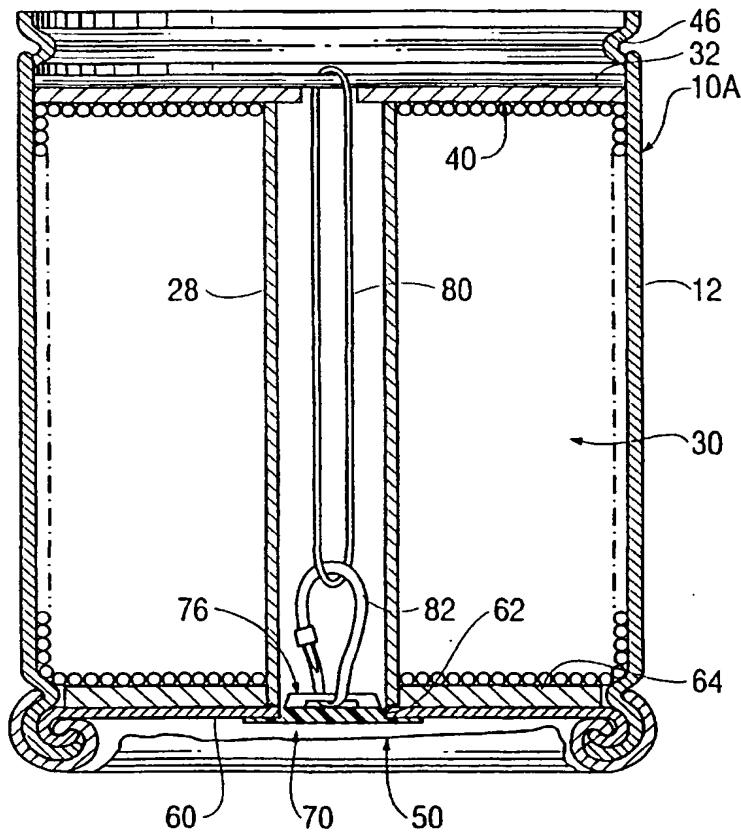
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[Continued on next page]

(54) Title: WIRE-COIL PACKAGING DRUM WITH IMPROVED BOTTOM ASSEMBLY



(57) Abstract: An improved wire-coil packaging drum comprises a drum (10A) with a bottom heading (60) having a hole (62), and an anchoring member mounted to the bottom heading (60) and cooperating with the hole (62) such that an anchoring portion (76) of the anchoring member (70) is disposed to anchor a hold-down system for a wire coil received in the drum. The anchoring member may comprise a snap-mounted plug that is conveniently inserted into the hole (62) of the bottom heading (60), with the hold-down system comprising an elastic loop, such as a rubber band (80), which may be secured to the plug by a cable tie (82) or the like.

WO 00/58181 A1



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

Title: WIRE-COIL PACKAGING DRUM WITH IMPROVED BOTTOM  
ASSEMBLY

CROSS-REFERENCE TO RELATED APPLICATION:

This application claims the benefit of U.S. Application No. 60/126,338 filed March 26, 1999.

BACKGROUND OF THE INVENTION

5 This invention relates to containers or drums used for packaging wire coils, and more specifically, to an improved bottom assembly for such containers or drums.

Figs. 1 and 2 of the accompanying drawings illustrate a conventional wire-coil packaging drum 10 as disclosed in 10 U.S. Patent No. 5,105,943 to Lesko et al. (incorporated herein by reference). The drum 10, which is ordinarily made of pasteboard, includes a cylindrical drum body 12 and a bottom assembly 16 designed to anchor a hold-down system (to be described below) for a wire coil 30 received in the drum. 15 The hold-down system serves as a dunnage for the wire coil during transport—specifically by applying a compressive force to the top of the coil to reduce shifting of the coil due to vibration and other movement of the drum.

The drum bottom assembly 16 includes a bottom heading 20 14 and a fixed-length strap 18 which is bent to form an

upwardly (as shown) projecting central loop 20. The opposite end portions 22 of the strap are secured to the upper surface of the bottom heading by stapling, and an annular disk 24 is glued to the upper surface so as to cover 5 the opposite ends of the strap and also to increase the strength of the drum bottom.

The hold-down system includes an elastic cord 34 provided with a hook 36 and a loop 38 at its opposite ends, respectively. An optional tubular, pasteboard core member 10 28 may be fitted over the looped portion 20 of strap 18 and received in a central opening 24a of the annular disk, where it is secured by gluing. The wire coil 30 is ordinarily formed directly in the drum by feeding the wire from a processing machine into the drum while rotating the drum 15 about its central axis. Once the coil has been formed, the hold-down system is completed by upwardly stretching the elastic cord 34, hooked to the central loop 20, and passing a rigid bar 32 through the loop 38. The bar thus provides continuous compressive engagement with the coil under the 20 tension of the elastic cord. The bar may compress the coil through the intermediary of an upper annular disk 40, which may be constituted by a pair of disk halves 42, as shown. Upon completion of the hold-down system, the drum may be sealed by attachment of a suitable top heading 46.

25 Although effective for its intended purpose, the above-described arrangement of the Lesko et al. patent is subject to several disadvantages in practice. For example, the

fixed-length strap is attached to the upper surface of the bottom heading by staples or the like. This is a costly and labor-intensive operation. Further, this operation is performed before attaching the bottom heading to the drum body, thereby complicating the drum assembly process.

5 Other disadvantages stem from the fact that the elastic cord is not adjustable. As a result of this, the compressive force applied to the wire coil by the elastic cord cannot be adjusted. Further, the cord is limited to 10 use only with drums within a certain height range. In order to accommodate drums over a wide range of heights, or to be able to adjust the amount of compressive force to be applied to a particular coil, it is necessary to maintain a supply of elastic cords having different lengths. This is 15 inconvenient and leaves open the possibility that an assembly worker will mistakenly select an elastic cord of an incorrect length, so that the wire coil is not properly secured by the hold-down system.

One attempt to simplify the drum assembly process of 20 the above-described arrangement is disclosed in U.S. Patent No. 5,819,934 to Cooper (also incorporated herein by reference). The Cooper patent describes an arrangement in which a fixed-length strap is attached to the central tubular core rather than to the drum bottom heading. This 25 eliminates the need to secure a strap to the bottom heading before the heading is attached to the drum body. However, the attachment of the strap to the core still constitutes a

costly and labor intensive operation. In addition, the Cooper patent does not address the problems stemming from lack of adjustability of the elastic cord.

Accordingly, there remains a need for an improved  
5 construction that avoids the aforementioned disadvantages of  
the structure described in the Lesko et al. patent.

#### SUMMARY OF THE INVENTION

In accordance with one of its principal aspects, the present invention provides an improved bottom assembly in  
10 which the conventional bottom heading and strap arrangement are replaced by an arrangement including a bottom heading having a hole, and an anchoring member mounted to the bottom heading in cooperation with the hole such that an anchoring portion of the anchoring member is disposed to anchor a  
15 hold-down system for container-received wire coil.

In a preferred implementation, the anchoring member comprises a molded plastic, snap-mounted plug having a generally cylindrical body provided with a laterally projecting flange portion and with at least one preferably  
20 resilient member projecting laterally from the body and axially displaced from the flange portion. The plug is mounted to the bottom heading by insertion of the plug member through the aforementioned hole. The projecting member is constructed to resiliently deform inwardly toward  
25 the body during insertion through the hole and to return toward an initial configuration after insertion such that

the bottom heading is entrapped between the flange portion and the projecting member.

Also, in a preferred implementation, the conventional elastic cord is replaced by an elastic loop member, such as a rubber band, which is secured to the anchoring portion of the anchoring member by a tie. The tie may take any suitable form and in one preferred mode is constituted by a conventional cable tie having a ratchet-type closure mechanism, a lengthwise portion of the tie being passed through the elastic loop member and an opening of the anchoring portion prior to closure of the tie. A portion of the elastic loop member may be drawn up through a central tubular core of the drum (e.g., using a hook) for insertion of a rigid hold-down bar through the loop to compress the received wire coil. The bottom end of the core may be held in position by an annular disk as in the conventional drum. Use of the core and of the annular disk is optional, however.

Advantageously, the effective length of the elastic loop and tie assembly, and thus the compressive force exerted on the wire coil received in the drum, or the range of suitable drum heights, may be adjusted as desired by appropriately securing the tie in a desired length. For example, in the case of the aforementioned cable tie, the length may be set by passing a desired length of the tie through the ratchet closure.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other aspects, features, and advantages of the invention will be more fully appreciated from the following detailed description of the preferred 5 embodiments taken in conjunction with the accompanying drawings.

In the drawings, Fig. 1 is a cross-sectional view of a conventional wire-coil packaging drum.

Fig. 2 is an exploded perspective view of the bottom 10 assembly and coil hold-down system of the drum in Fig. 1.

Fig. 3 is a cross-sectional view of an improved drum in accordance with the present invention.

Fig. 4 is a plan view of an anchoring member used in the bottom assembly of the drum in Fig. 3.

Fig. 5 is a fragmentary side elevation of the anchoring 15 member showing suitable dimensions (in inches) for snap-mounting the anchoring member into a 2-inch diameter circular hole in a bottom heading having a thickness of 0.12 in.

Fig. 6 is a view similar to Fig. 5 illustrating the 20 anchoring member snap-mounted to the bottom heading.

Fig. 7 is a plan view showing a bottom assembly and parts of the hold-down system suitable for use in the drum of Fig. 3.

Fig. 8 is a perspective view of the anchoring member 25 having a cable tie secured thereto.

Fig. 9 is a partially sectional side view showing an

alternative form of the anchoring member suitable for use with the drum of Fig. 3.

Fig. 10 is a plan view of the anchoring member in Fig. 9.

##### 5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 3 shows a wire-coil packaging drum 10A incorporating an improved bottom assembly and hold-down system according to the present invention. The structural differences between the drums shown in Figs. 1 and 3 reside 10 principally in the construction of the bottom assembly 50 and hold-down system. The following description will therefore focus on those portions of the drum.

The bottom assembly 50 comprises a drum bottom heading 60 having a central hole 62. The hole 62 is preferably 15 circular, although it will be appreciated that other shapes may be suitable. An annular disk 64 may be mounted onto bottom heading 60 to provide strength, if desired, as in the conventional structure. An anchoring member 70 is mounted to the bottom heading 60 in cooperation with hole 62 such 20 that an anchoring portion 76 of anchoring member 70 is disposed for anchoring a hold-down system for a wire coil 30, as will be explained shortly.

Referring additionally to Figs. 4-6, anchoring member 70 is preferably constituted by a snap-mounted plug having a 25 body 71 of cross-sectional shape generally complementary to that of hole 62. In the form shown, plug body 71 is

generally cylindrical with a diameter slightly smaller than that of hole 62. The plug 70 is further provided with a laterally projecting flange portion 72 and at least one laterally projecting, preferably resilient member 74 at 5 positions of the body axially spaced from flange portion 72, there being four such members disposed at equal circumferential intervals in the illustrative form.

Plug 70 is preferably formed as a unitary plastic molding, as of HDPE (high density polyethylene), 10 polypropylene, or any other suitable plastic, and in such form can be manufactured inexpensively. To reduce material cost, plug body 71 may have a hollowed out configuration. As a result of this, and of the simplified assembly 15 procedure to be explained below, a substantial cost saving can be achieved relative to the conventional structure previously described.

In order to mount plug 70 to bottom heading 60, the plug is inserted upwardly through hole 62 as indicated by an arrow A in Fig. 6. As plug 70 moves through hole 62, 20 members 74 are resiliently deformed inwardly toward the plug body 71 by engagement with the sidewalls of the hole. Once members 74 have cleared the hole, they return (snap) to their initial configuration such that bottom heading 60 is trapped between the upper surface of flange portion 72 and 25 the lower surfaces of members 74 as best seen in Fig. 6. Although not necessary, it is preferred that the surfaces of flange portion 72 and resilient members 74 that engage the

opposite surfaces of bottom heading 60 be parallel to the opposite surfaces of the bottom heading to maximize the area of engagement.

Plug 70 further comprises an anchoring portion 76, 5 including a bridge-shaped member 77, which projects axially from the upper end of body 71, and an opening or slot 78 designed to receive a hold-down system.

A preferred form of the hold-down system is shown in detail in Figs. 7 and 8. In the form shown, the hold-down 10 system comprises an elastic loop, such as a rubber band 80, and a tie 82. Tie 82 is preferably an adjustable tie, such as a conventional cable tie with a ratchet-type closure mechanism. Note that in the arrangement of Fig. 7, an annular disk 64a having a stepped configuration in its 15 thickness direction is mounted to the bottom heading in order to provide increased strength toward the outside of the drum.

Prior to closure of the tie 82, a length of the tie is 20 passed through both slot 78 of anchoring portion 76 and the loop of rubber band 80. Thus, upon closure of the tie, both the tie and the rubber band 80 are secured to plug 70 via anchoring portion 76. A portion of rubber band 80 may be drawn upwardly through the drum, after formation of wire 25 coil 30, for insertion of hold-down bar 32 through the loop of the band, thereby enabling compression of the wire coil with bar 32.

It will be appreciated that because tie 82 is

adjustable, the effective length of the rubber band and tie assembly 80, 82 can be set as desired. Accordingly, the assembly can accommodate a wide range of drum heights and allows the compressive force on the wire coil can be set as 5 desired.

Another approach to attaching rubber band 80 to plug 70 is simply to knot the band itself directly to anchoring portion 76. This can be accomplished by passing a first portion of the band through slot 78, back over bridge member 10 77 and through the remainder of the band, and then pulling the first portion tight so as to knot the band to bridge member 77. Of course, this approach does not provide the adjustability afforded by the use of tie 82.

Figs. 9 and 10 illustrate another plug 170, which is a 15 variation of the first plug configuration described above. Like the first configuration, plug 170 has a generally cylindrical body 171 with a laterally projecting flange portion 172 at one end. In this second configuration, plug body 171 has a hollowed out design to define a recess 171a, 20 thus reducing the amount of plastic required to produce the plug as previously noted. The other end portion of the plug is formed with a pair of laterally projecting resilient circumferential flanges 174a, 174b, which are axially spaced both from each other and from the flange portion 172. The 25 outer diameters of flanges 174a, 174b are both slightly greater than the diameter of hole 62 in the drum bottom heading, and the outer diameter of flange 174b is also

slightly less than that of flange 174a. The flange 174b thus facilitates insertion of the plug into the hole of the drum bottom heading. To further facilitate insertion of the plug, the diametrically opposite outer surfaces of the 5 bridge member 177 and the outer circumferential edges of the flanges 174a and 174b may be formed so as to lie on a common imaginary conical surface S as indicated in Fig. 9, thus giving the upper portion of the plug a generally conical profile.

10 The hold-down system is attached to the opening 178 of anchoring portion 176 in the same manner as in the drum of Fig. 3.

It will be appreciated that the plug and rubber band assembly of the invention as described above may be mounted 15 to the bottom heading either before or after the bottom heading is joined to the drum body, thus increasing flexibility of the drum assembly process. Further, the snap-mount design of the plug greatly simplifies the assembly process because it avoids the need for more labor- 20 intensive operations associated with the attachment of the strap in a conventional drum design.

While preferred embodiments of the invention have been shown and described, these embodiments are intended to be exemplary, not restrictive. It will be apparent to those skilled in the art that modifications can be made without departing from the principles and spirit of the invention, 25 the scope of which is set forth in the appended claims. For

example, while a snap-mounted plug is preferred in practice of the invention, the plug may be designed to be mounted to the drum bottom heading by press-fitting. Further, the plug need not completely cover the hole in the bottom heading, 5 but is preferably designed to do so, as in the illustrative forms, in order to prevent (or at least substantially prevent) dirt and other foreign matter from entering the drum via the hole.

WHAT IS CLAIMED IS:

1       1. A bottom assembly for a container used in the  
2 packaging of a wire coil, said bottom assembly comprising a  
3 bottom heading and an anchoring member mounted to said  
4 bottom heading, said anchoring member being inserted through  
5 a hole of said bottom heading and having portions disposed  
6 at opposite sides of said bottom heading so as to entrap  
7 said bottom heading therebetween, said anchoring member  
8 further having an anchoring portion constructed and disposed  
9 to anchor a hold-down system for container-received wire  
10 coil.

1       2. A bottom assembly according to Claim 1, wherein  
2 said anchoring member is snap-mounted to said bottom  
3 heading.

1       3. A bottom assembly according to Claim 1, wherein  
2 said anchoring member is a unitary molded plastic member.

1       4. A bottom assembly according to Claim 1, wherein  
2 said anchoring member comprises a plug having a generally  
3 cylindrical body provided with a laterally projecting flange  
4 portion and at least one resilient member, projecting  
5 laterally from said body and axially displaced from said  
6 flange portion, said plug being mounted to said bottom  
7 heading by insertion of said resilient member through said  
8 hole, said resilient member being constructed to resiliently

9 deform inwardly toward said body during insertion through  
10 said hole and to return toward an initial configuration  
11 after insertion such that said bottom heading is entrapped  
12 between said flange portion and resilient member.

1 5. A bottom assembly according to Claim 4, wherein  
2 said plug has a plurality of said resilient members  
3 circumferentially spaced from each other.

1 6. A bottom assembly according to Claim 4, wherein  
2 said at least one resilient member has a bevelled  
3 circumferential edge.

1 7. A bottom assembly according to Claim 4, wherein  
2 said plug has a laterally projecting resilient member  
3 axially spaced from said at least one resilient member to  
4 facilitate mounting of said plug to said bottom heading.

1 8. A bottom assembly according to Claim 4, wherein  
2 said flange portion and said resilient member(s) are  
3 disposed substantially at opposite first and second axial  
4 ends of said plug body, respectively, and said plug further  
5 includes an anchoring portion projecting axially from said  
6 second end and having an opening for anchoring said hold-  
7 down system.

1           9. A bottom assembly according to Claim 8, wherein  
2        said hold-down system includes an elastic loop member  
3        secured to said opening of said anchoring portion.

1           10. A bottom assembly according to Claim 9, wherein  
2        said elastic loop member is secured to said opening by a tie  
3        passing through said opening and said elastic loop member.

1           11. A bottom assembly according to Claim 1, wherein  
2        said anchoring portion of said anchoring member is formed  
3        with an opening for anchoring said hold-down system.

1           12. A bottom assembly according to Claim 11, wherein  
2        said hold-down system includes an elastic loop member  
3        secured to said opening of said anchoring portion.

1           13. A bottom assembly according to Claim 9, wherein  
2        said elastic loop member is secured to said opening by a tie  
3        passing through said opening and said elastic loop member.

1           14. A bottom assembly according to Claim 12, wherein  
2        said bottom heading is formed of pasteboard.

1           15. A bottom assembly according to Claim 4, wherein  
2        said plug body is at least partially hollowed out.

1           16. A bottom assembly for a container used in

2 packaging a wire coil, said bottom assembly comprising a  
3 bottom heading having a hole, and an anchoring member  
4 mounted to said bottom heading and cooperating with said  
5 hole such that an anchoring portion of said anchoring member  
6 is disposed to anchor a hold-down system for a container-  
7 received wire coil.

1 17. A bottom assembly according to Claim 16, wherein  
2 said anchoring member is inserted in said hole and has  
3 portions disposed at opposite sides of said bottom heading  
4 so as to entrap said bottom heading therebetween.

1 18. A bottom assembly according to Claim 16, wherein  
2 said anchoring portion has an opening for anchoring said  
3 hold-down system.

1 19. A bottom assembly according to Claim 18, wherein  
2 said hold-down system includes an elastic loop member  
3 secured to said opening of said anchoring portion.

1 20. A bottom assembly according to Claim 19, wherein  
2 said elastic loop is secured to said opening by a member  
3 passing through said opening and said elastic loop.

1 21. A bottom assembly according to any of Claims 16-  
2 20, wherein said anchoring member is a unitary molded  
3 plastic member.

1           22. A bottom assembly according to any of Claims 1-21,  
2 and which is incorporated in a drum.

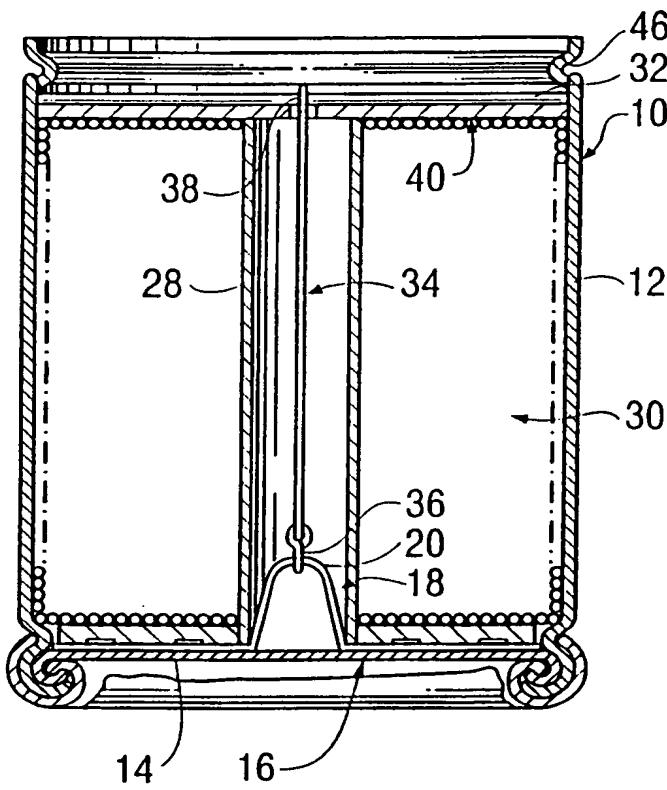
1           23. A drum assembly, comprising a container drum and a  
2 bottom assembly according to any of the preceding claims.

1           24. An anchoring assembly, comprising an anchoring  
2 member adapted to be mounted to a container drum bottom  
3 heading and an elastic loop member secured to said anchoring  
4 member by a tie passing through said elastic loop member.

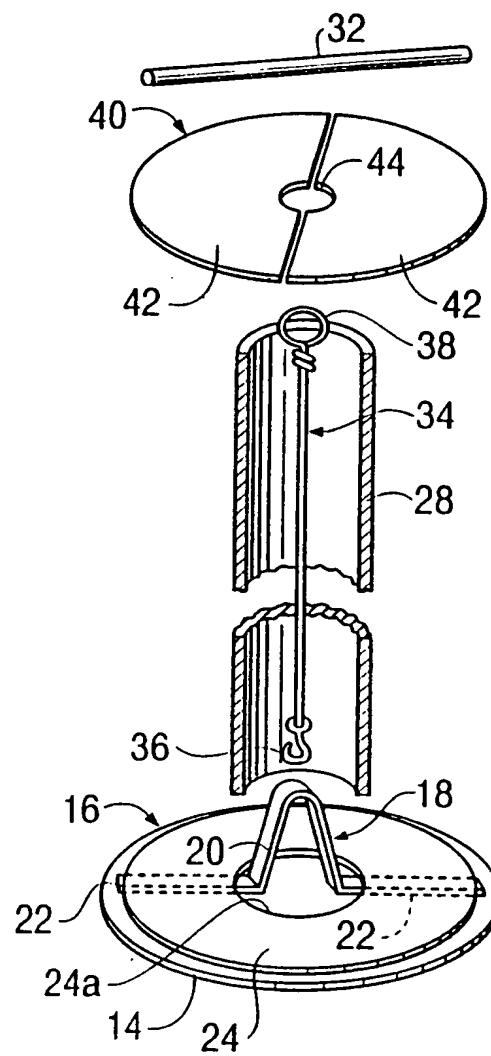
1           25. An anchoring assembly according to Claim 24,  
2 wherein said tie is a cable tie having a ratchet-type  
3 closure mechanism.

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**FIG. 1**  
**(PRIOR ART)**

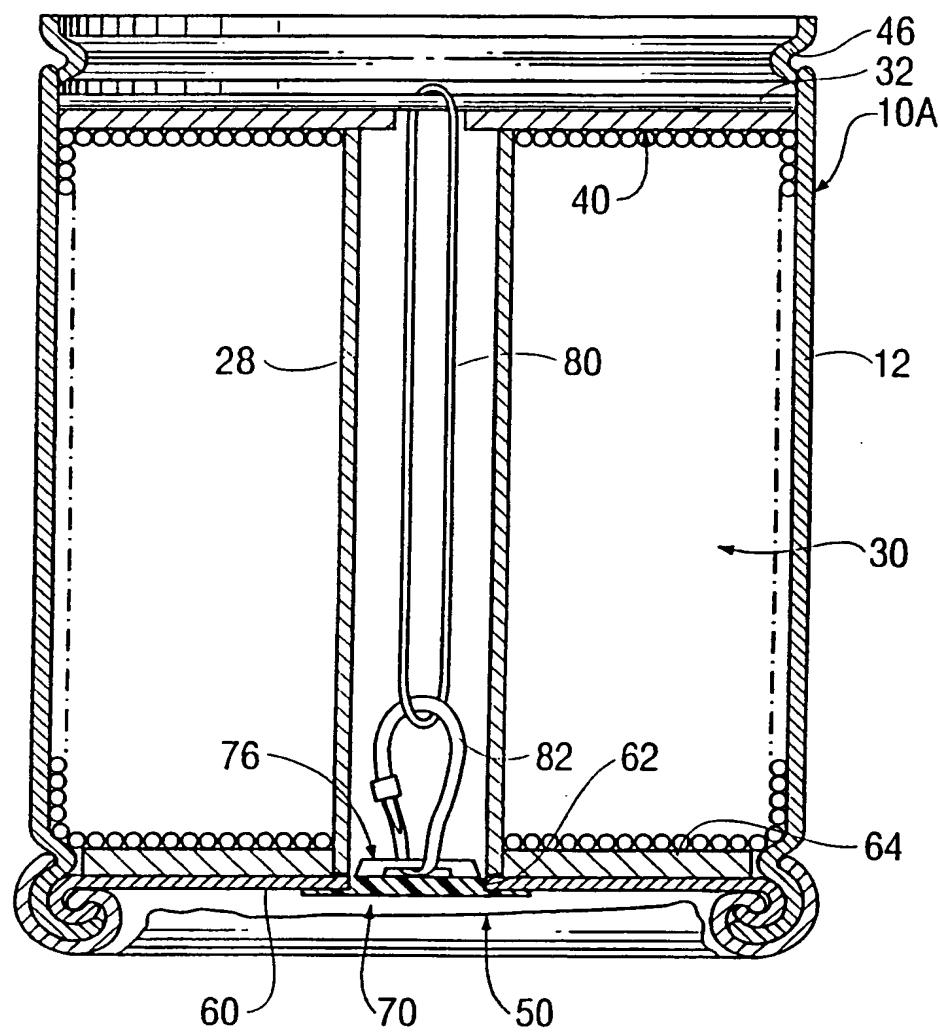


**FIG. 2**  
**(PRIOR ART)**

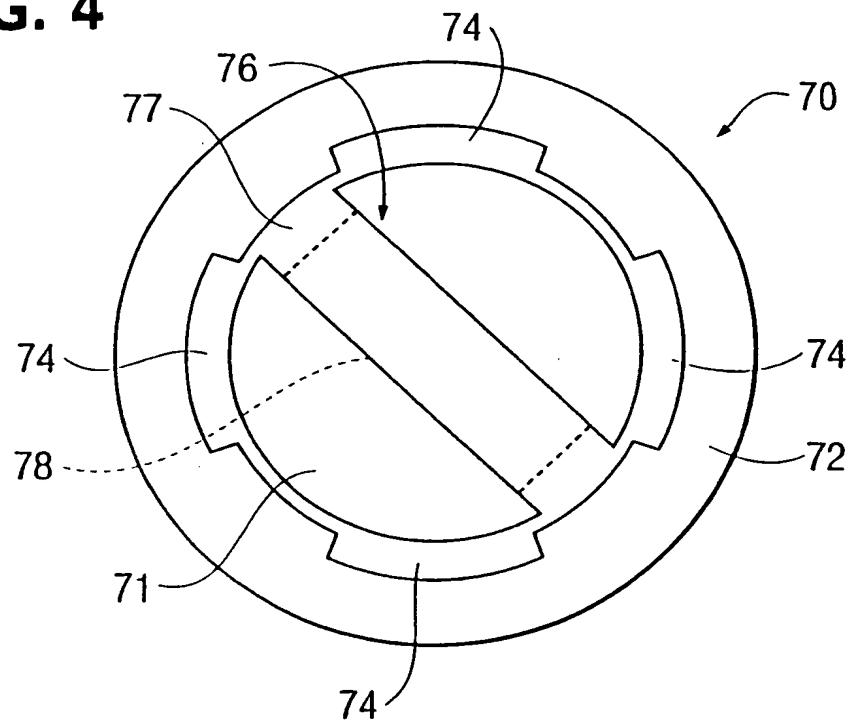
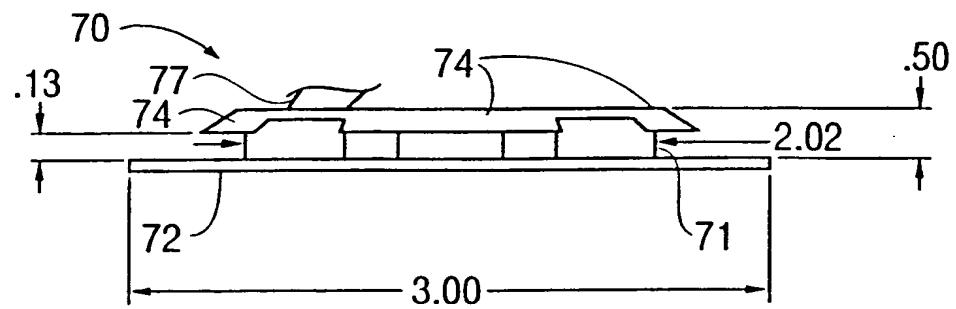
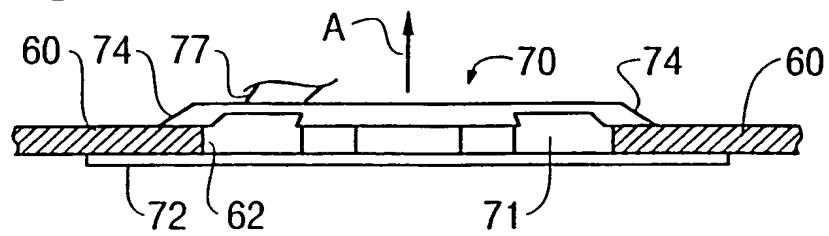


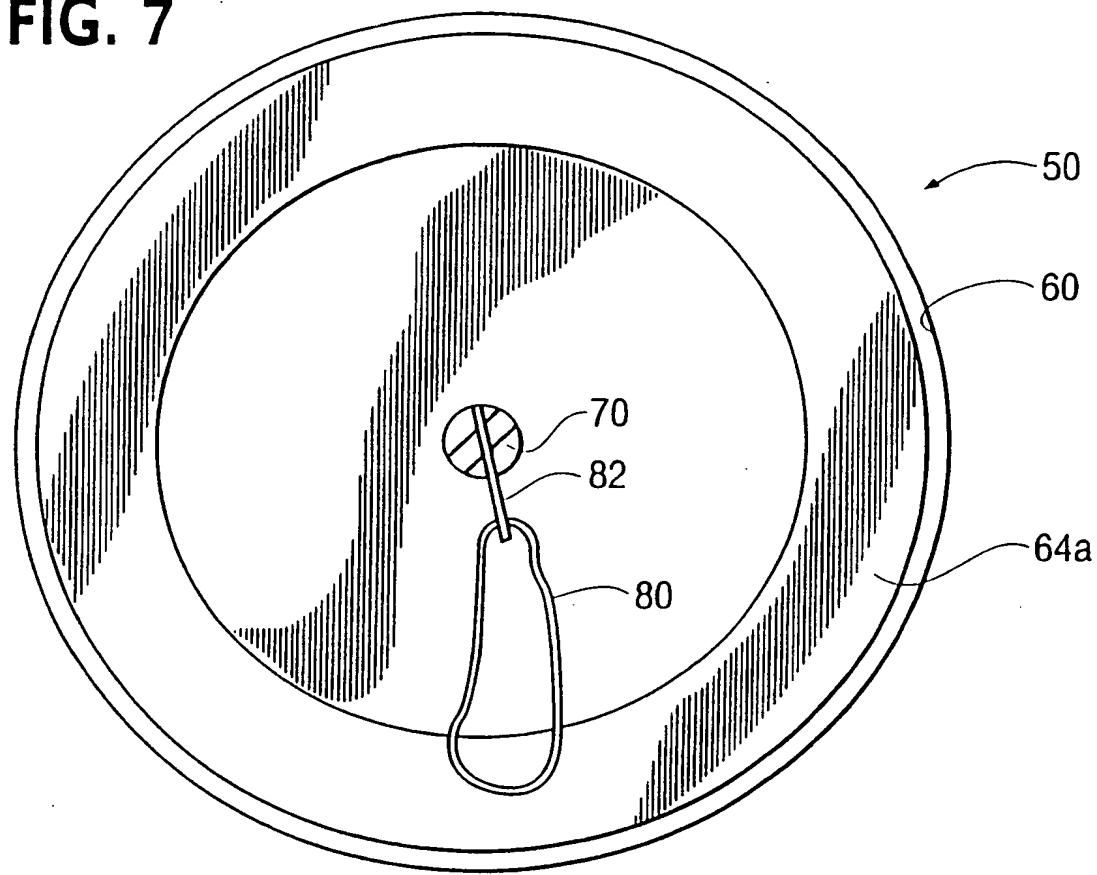
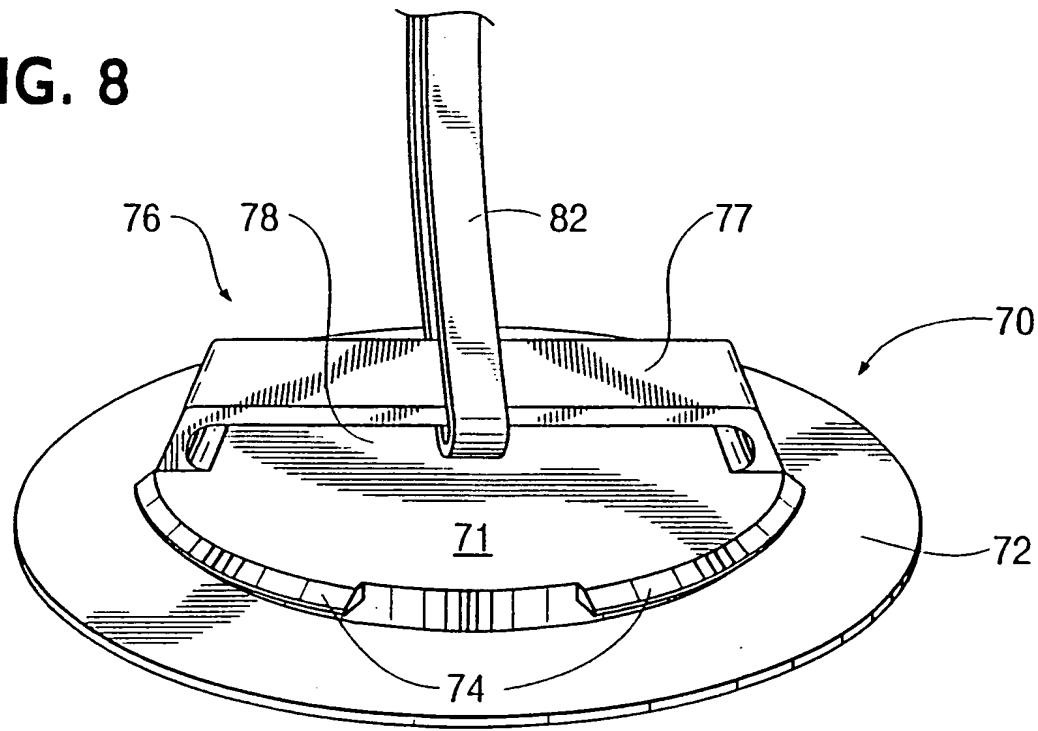
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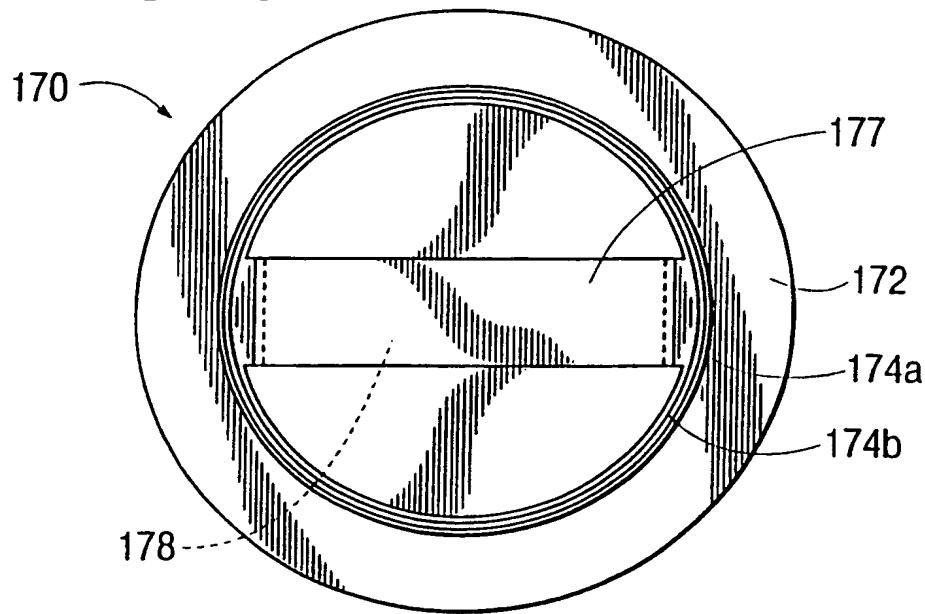
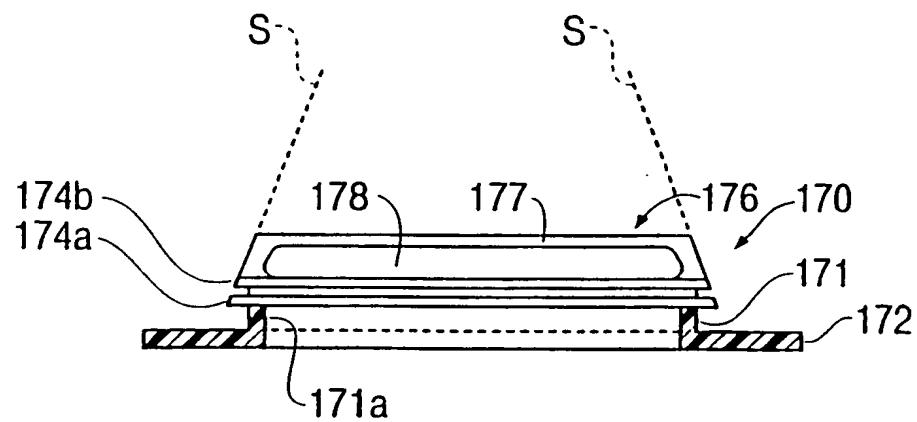
FIG. 3



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**FIG. 4****FIG. 5****FIG. 6**

**FIG. 7****FIG. 8**

**FIG. 10****FIG. 9**

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/07679

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :B65D 85/66

US CL :206/389, 397, 408, 409, 413, 415, 416,

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 206/389, 397, 408, 409, 413, 415, 416,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,105,943 A ( <i>LESKO et al.</i> ) 21 April 1992, See col. 3 line 33 to col. 4, line 60.	16, 18 and 21
A	US 5,819, 934 A ( <i>COOPER</i> ) 13 October 1998, See abstract.	16

 Further documents are listed in the continuation of Box C. See patent family annex.

Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

27 JUNE 2000

Date of mailing of the international search report

19 JUL 2000

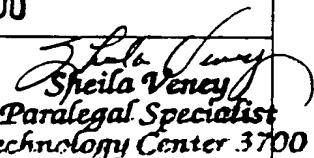
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